Verification of Translation

U.S. Patent Application No. 10/796,704

Title of the Invention:

SEMICONDUCTOR LASER DEVICE AND OPTICAL PICKUP APAPRATUS USING THE SAME

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(Page 11, left column, lines 28-48)

[0058] Furthermore, it was confirmed by SEM observation that the ridge-shaped p-type second cladding layer is formed on the protective film made of SiN_x so as to overlap it by about 0.4 μm as shown in FIG. 1. It was confirmed that, although the swell of a ridge-side wall is slightly large in a stripe width increment portion, the p-type second cladding layer also is formed on the protective film so as to overlap it by about 0.4 μm in this portion. Furthermore, in the entire stripe width, the contact layer covered the entire surface of the ridge-side wall. Consequently, the ridge-shaped p-type second cladding layer was exposed to the surface to prevent the surface from being oxidized. There is no particular problem in covering a partial or entire surface of the ridge-side wall with the SiN_x protective film after the growth of the ridge, as in the conventional method. However, in the present example, considering the simplification of a process, the reduction in contact resistance, and the like, a protective film made of a dielectric or the like was not formed on the ridge-side surface.

[0059] After that, a p-side electrode 113 was vapor-deposited, and the substrate was thinned to 100 μm. Then, an n-side electrode 114 was vapor-deposited to be alloyed (FIG. 1(c)). A chip bar was cut out from the wafer thus produced by cleavage, whereby a laser resonator structure was formed. The resonator length at this time was set to be 500 μm. Asymmetric coating (front end surface 10% – rear end surface 90%) was performed, and thereafter, the chip bar was separated into chips by secondary cleavage.